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R&D Program: TOWNS

Work Unit: Innovative Management of Stormwater for Flood Damage Reduction and Ecosystem Restoration

Needs & Problems Addressed:

- Stormwater management practices are underutilized in conventional flood damage reduction efforts
- Current practices result in system degradation due to extended duration
- Significant ecological and economic impacts

Objectives:

- Guidelines and tools for planning, assessment and design
- New designs to better simulate natural hydrograph and prevent system degradation

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Work Unit Funding Profile:

FY02	FY03	FY04	FY05	Total
$ 0k	$150k	$150k	$150k	$450k

Comments on funding plan:

- Will be leveraged against one GI R&D and two reimbursable projects for data collection and assessment

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Business Program/Missions Areas Supported:

- Inland Navigation 0 %
- Coastal Navigation 0 %
- Coastal Storm Damage Reduction 0 %
- Inland Flood Control/Damage Reduction 50 %
- Environmental Protection & Quality 30 %
- Multi-Purpose (Hydropower, Rec & Water Supply) 0 %
- Emergency Management 5 %
- Regulatory 5 %
- Support for Others 10 %

(Must to add to 100%) Total: 100 %

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CW Strategic Goals Check List: (check if applies)

- Provide sustainable water resources development & mgmt _X_
- Restore past environment degradation _X_
- Provide project services of high quality _X_
- Reduce losses from natural & manmade hazards _X_
- Supports being a world class technical leader _X_
- Addresses strategic or system needs in a framework or integrated approach by developing:
  - Methods or decision support tools _X_
  - Technology to improve life cycle productivity _X_
  - Technology to monitor systems, provide feedback and develop operating guidance _X_

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Which “short term” field needs does this support:

- Tools to meet Challenge 21 & EOP
- Expedites project-level decision-maki

by providing criteria for stability analyse

- Preserves and enhances environment
- Improves efficiencies in holistic

watershed-based planning and design

Field Review Group Relative Ranking:

- FRG planned for 21-22 August 2002

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Listening Sessions Check List: (check if applies)

- Improves data sharing/exchange with the public in these areas:
  - Provides one stop shop for maps & data for basin wide planning ___
  - Provides data to make informed decisions _X_
  - Provides a system for basin wide planning ___
  - Provides information about what is happening at Corps facilities ___ (up to date web sites)
- Tech Transfer plan to include educating the public _X_
- Coordinate research, models, analysis with regulatory agencies to insure results will be accepted _X_
- Develop R&D products:
  - For watershed management plans, not just at the project level _X_
  - To include aesthetics as components of all projects _X_
- Create better models for ground & surface water _X_

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Products:

- TN – Stormwater management regulations
- TN – State of practice in stormwater management
- TN – Impacts of detention on stream stability
- TN – Stability assessment techniques
- TN – Integrating SWM with riparian corridors and multi-stage floodways
- JP – Impacts of flow duration on channel stability and habitat downstream of stormwater ponds
- TN - Stormwater detention facility design
- TN - Stormwater system optimization
- Complete data analysis
- TR –Stormwater management facilities in sustainable urban flood management
- JP – Stormwater detention outlet designs to simulate natural runoff hydrographs

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Benefits

- Direct:
  - Reduced channelization & ROW requirements
  - Reduced infrastructure replacement & maintenance
  - Reduced sediment delivery & downstream impacts
  - ROI ratio: >> 1000:1
- Indirect:
  - Enhances water quality
  - Reduced ecosystem degradation
  - Improved aesthetics
  - Increased property values

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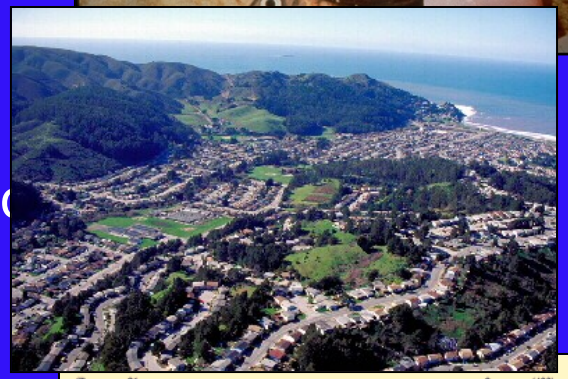

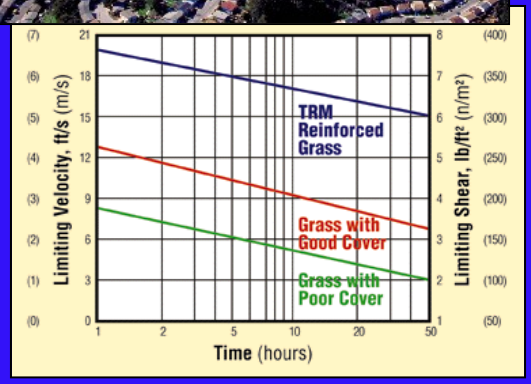

Technology Transfer Plan:

- Workshops for Problem ID, Training, and Information Exchange
- Technical Note Series for Rapid Technology Dissemination
- Journal Papers for Peer Acceptance
- Basic and Applied Results Transferred t TOWNS, RSM & SMART
- Technical Report for Detailed Guidance
- New Analytical Tools WEB Downloadable
- Demonstrations & Leveraging

09/13/16

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Why should the Corps fund this R&D, instead of private industry and/or others:

- Cities, states and NGOs with a strong interest in this issue lack the technical resources to undertake the R&D
- Private industry has little incentive to develop the technologies because the benefits are societal and not readily capitalized
- The Corps and its partners stand to gain immediate and long-term benefits from the research – both directly and indirectly

What is Impact if not started:

- Continued resource degradation and high project maintenance costs associated with system instability and infrastructure failure
- Continued project-based focus rather than watershed-based